Cognitive-Behavioral Psychology: Implications for Disaster and Terrorism Response

Josef I. Ruzek, PhD;[1] Robyn D. Walser, PhD;[1] Amy E. Naugle, PhD;[2] Brett Litz, PhD;[3] Douglas S. Mennin, PhD;[4] Melissa A. Polusny, PhD;[5] Dianna M. Ronell, PhD;[6] Kenneth J. Ruggiero, PhD;[7] Rachel Yehuda, PhD;[8] Joseph R. Scotti, PhD[9]

1. National Center for Post-Traumatic Stress Disorder, Veterans Administration (VA) Palo Alto Health Care System, Menlo Park, California USA
2. Western Michigan University, Kalamazoo, Michigan USA
3. National Center for Post-Traumatic Stress Disorder, Boston Veterans Affairs Health Care System, and Boston University School of Medicine, Boston, Massachusetts USA
4. Yale University, New Haven, Connecticut USA
5. Minneapolis Veterans Administration Medical Center, and University of Minnesota Medical School, Minneapolis, Minnesota USA
6. Massachusetts General Hospital, Boston, Massachusetts USA
7. Medical University of South Carolina, Charleston, South Carolina USA
8. Mount Sinai School of Medicine, and Bronx VA Medical Center, Bronx, New York USA
9. West Virginia University, Morgantown, West Virginia USA

Correspondence:
Josef I. Ruzek, PhD
National Center for PTSD
VA Palo Alto Health Care System
Mail Code PTSD 334 MPD
795 Willow Road
Menlo Park, CA 94025 USA
E-mail: josef.ruzek@va.gov

Keywords: cognitive-behavioral therapy; disaster mental health; disaster response planning; immediate response; post-traumatic stress disorder; psychotherapy integration; terrorism; trauma

Abbreviations:
DiMAG = Disaster Mitigation Advisory Group
ISDR = International Strategy for Disaster Reduction
PAHO = Pan-American Health Organization
SEARO = Southeast Asia Regional Office
WADEM = World Association for Disaster and Emergency Medicine
WHO = World Health Organization

Abstract

Given the personal and societal costs associated with acute impairment and enduring post-traumatic stress disorder (PTSD), the mental health response to disasters is an integral component of disaster response planning. The purpose of this paper is to explore the compatibility between cognitive-behavioral psychology and the disaster mental health model, and explicate how cognitive-behavioral perspectives and intervention methods can enhance the effectiveness of disaster mental health services. It is argued that cognitive-behavioral methods, if matched to the contexts of the disaster and the needs of individuals, will improve efforts to prevent the development of PTSD and other trauma-related problems in survivors of disaster or terrorist events. First, the similarities between models of care underlying both disaster mental health services and cognitive-behavioral therapies are described. Second, examples of prior cognitive-behavioral therapy-informed work with persons exposed to disaster and terrorism are provided, potential cognitive-behavioral therapy applications to disaster and terrorism are explored, and implications of cognitive-behavioral therapy for common challenges in disaster mental health is discussed. Finally, steps that can be taken to integrate cognitive-behavioral therapy into disaster mental health are outlined. The aim is to prompt disaster mental health agencies and workers to consider using cognitive-behavioral therapy to improve services and training, and to motivate cognitive-behavioral researchers and practitioners to develop and support disaster mental health response.

Ruzek JI, Walser RD, Naugle AE, Litz B, Mennin DS, Polusny MA, Ronell DM, Ruggiero KJ, Yehuda R, Scotti JR: Cognitive-behavioral psychology: Implications for disaster and terrorism response. ***Prehospital Disast Med*** **2008;23(5):397–410.**

Received: 02 October 2007
Accepted: 18 October 2007
Revised: 25 January 2008

Web publication: 30 October 2008

Introduction

In the immediate aftermath of large-scale events and/or acts of terrorism, many of the survivors understandably experience shock, anguish, anxiety, and various symptoms associated with acute stress. Acute stress reactions involve a range of experiences, including painful re-experiencing of the event, emotional disengagement, difficulties with short-term memory, concentration, decision-making, insomnia, hyperarousal, and exaggerated startle reactions. The acute psychological effects of trauma also can strain relationships and lead to impairments in work and school functioning. Even though the acute impact of disasters can be disruptive, most people do not require professional assistance[1,2] and return to normal functioning of their own accord. Nevertheless, between 9% and 37% of individuals exposed to traumatic events, will develop post-trau-

matic stress disorder (PTSD).[3–5] Furthermore, the development of PTSD is a risk factor for the onset of other disorders, such as depression and substance dependence.[6,7]

A number of disaster mental health services are employed to prevent or reduce the impact of acute distress and the onset of chronic psychological and behavioral problems in addition to efforts to reduce the personal and societal costs.[8] These services often include the provision of psychological first aid. This initial intervention is designed to initiate disaster recovery efforts (e.g., shelter, food, medical assistance) and to provide emotional, psychological, and social support for the most distressed.[9,10] Disaster mental health services also involve delivery of brief, non-specific, counseling interventions and referral for mental health treatment, if needed.

The purpose of this paper is to explore the compatibility between cognitive-behavioral psychology and the disaster mental health model, and explicate how cognitive-behavioral perspectives and interventional methods can enhance the effectiveness of disaster mental health services. It is argued that cognitive-behavioral methods, if matched to the contexts of disasters and the needs of individuals, would improve efforts to prevent the development of PTSD and other trauma-related problems in survivors of disaster or acts of terrorism. First, the similarities between models of care underlying disaster mental health services and cognitive-behavioral therapies are described. Second, examples of prior cognitive-behavioral therapy-informed work with persons exposed to disaster or terrorist attacks are provided, advantages of cognitive-behavioral therapies for disaster mental health problems are described, and the implications of cognitive-behavioral therapies for common challenges in disaster mental health are discussed. Finally, the steps that can be taken to integrate cognitive-behavioral therapy into disaster mental health are outlined. The aim of this paper is to prompt disaster mental health agencies and workers to consider using cognitive-behavioral therapy to improve services and training, and to motivate cognitive-behavioral researchers and practitioners to develop and support disaster mental health response.

Models of Care

What is Cognitive-Behavioral Therapy?

Cognitive-behavioral therapy is a conceptual approach to changing behavior that focuses on alleviating human suffering through the modification of maladaptive behaviors and cognitive processes. The use of cognitive-behavioral therapy entails a family of strategies and interventions based on scientifically validated principles of behavior and behavioral change.[11,12] Specific cognitive-behavioral therapy techniques relevant to survivors of disasters or terrorist attacks include coping skills training, problem-solving, imaginal and real world exposure to anxiety-eliciting stimuli, cognitive restructuring (identifying and modifying beliefs or thoughts that intensify or prolong distress), goal-setting, progressive muscle relaxation, behavioral activation, guided imagery, breathing control, and relapse-prevention strategies.

One main assumption unifying cognitive-behavioral therapy approaches is that clinical problems, such as PTSD, depression, and substance abuse, are learned responses. The development and maintenance of problems can be explained by theories of learning that involve principles of classical conditioning, operant conditioning, modeling, and information processing—the same learning processes that underlie adaptive, non-problematic human behavior. This assumption about human functioning rejects the disease model of psychopathology, and emphasizes the functional and adaptive nature of behavior within a given context.

The goal of cognitive-behavioral therapy is to assist individuals in learning new, more adaptive behavioral responses, and thereby, reduce their distress. In order to accomplish this goal, a cognitive-behavioral therapy provider collaborates with a help-seeker to conduct a functional analysis of the problematic behaviors that the person is seeking to change. A functional analysis involves understanding the conditions that give rise to a particular way of thinking or behaving and the consequences that follow and maintain the behavior.[13] The provider and help-seeker work together to understand the underlying causes of behavior problems: why and how they are occurring, what factors are maintaining them, and how to change them. The focus in cognitive-behavioral therapy usually is on identifying current rather than historical determinants of behavior through functional analysis. Once current determinants of behavior have been identified, individuals are taught new ways of acting and encouraged to practice these new skills. An important component of cognitive-behavioral therapy involves individualized psycho-education about how behavioral theory may explain behavioral problems. For example, psycho-education with a trauma survivor is individualized to help that client understand effects of traumatic stressors in general, and in particular, his or her personal post-traumatic reactions.[10] Cognitive behavioral therapy tends to be briefer and more time-limited than many other psychotherapeutic approaches, and is problem-focused, structured, and instructional.

Disaster Mental Health and Cognitive-Behavioral Therapy

The philosophy of disaster mental health services emphasizes several elements that are largely compatible with the cognitive-behavioral therapy model.[10,14] Disaster mental health, like cognitive-behavioral therapy, largely is educational in nature. A major goal of disaster mental health education is the "normalization" of survivor reactions, which are interpreted as normal reactions to extreme conditions. Disaster mental health workers seek to avoid pathologizing stress reactions, and largely avoid diagnostic labels associated with the medical model of mental health. This view of normality of reactions to disaster is consistent with the cognitive-behavioral therapy concept of problem behaviors as adaptive responses shaped by the same mechanisms of learning that produce non-problematic behaviors. Disaster mental health interventions, like many cognitive-behavioral therapy approaches, are time-limited and brief, and concerned with managing the present situation (rather than intrapersonal conflicts or problems during development). Disaster mental health responders offer practical suggestions about how survivors can cope with their situation and

manage ongoing adversity. This pragmatic emphasis fits well with the cognitive-behavioral therapy goals of helping individuals learn more adaptive responses to current situations. Also, disaster mental health is a strengths-based model in that it emphasizes the natural resilience of survivors and seeks to empower them to actively manage their own stressors and stress reactions. This emphasis on self-management also is found within cognitive-behavioral therapy. As with cognitive-behavioral therapy, disaster mental health personnel actively collaborate with survivors to identify challenges and decide on coping strategies. As the following sections show, there are additional cognitive-behavioral therapy methods that can be called upon to address the needs of disaster survivors.

Cognitive-Behavioral Therapy and Post-Trauma Problems

Cognitive-behavioral therapy interventions have been developed for use with clinical populations that share similar problems to those experienced by survivors of disaster or terrorism, including acute stress reactions, PTSD and other anxiety disorders, depression, substance abuse, anger-control, and interpersonal conflict. A variety of cognitive-behavioral therapy interventions that have been developed are described and applied to these clinical problems. It it noted how some of these interventions have been adapted for survivors of disasters or terrorist attacks.

Acute Stress Reactions

It is a safe assumption that even in the aftermath of mass-violence, terrorist attacks, and widespread devastating events, such as Hurricane Katrina, most survivors are not at risk for serious mental health disorders. Although the majority of direct victims are understandably acutely distressed and psychologically affected by such devastating life experiences and ensuing losses of resources that might otherwise have been relied upon to manage and cope with such adversity, the majority of survivors who initially display distress will recover as a result of natural resources and personal resourcefulness. This is not to imply that those who do not develop a psychiatric disorder are necessarily completely unaffected or unchanged by disasters. In an ideal world, behavior-change technology would be used to build and maintain resilience of all survivors, minimize maladaptive coping behaviors (e.g., alcohol and drug use) in those that do not develop formal mental health problems, and help those who will recover on their own to regain prior levels of functioning quickly.

However, public health decisions about intervention in disasters are highly *resource-dependen*t. Most people in need do not get the care they require. There are a variety of logistical and psychological barriers to the provision and acceptance of mental health services, and expert care providers (especially cognitive-behavioral therapy-trained practitioners) are in short supply (and may be victims themselves). The critical priority is to assure that those who are at most risk for debilitating and enduring problems get the evidence-based care they need before their problems become entrenched.

Prior to inclusion of acute stress disorder (ASD) in the psychiatric nomenclature, there was no formal method for identifying (or labeling) individuals with significantly impairing traumatic stress reactions following the first few days and within the first month of exposure to a traumatic event. Identification of ASD held the promise of distinguishing individuals who are experiencing transient stress reactions from those who require formal mental health intervention during disasters. Acute stress disorder is similar to PTSD; the primary difference is the time frame (less than or greater than one month) and emphasis on dissociative reactions in the diagnosis of ASD. However, the dissociative symptoms of ASD appear to have the least predictive utility in identifying those at risk for later development of PTSD; thus, in many respects, ASD can be construed as "early PTSD".

There is good evidence that early, severe post-traumatic stress symptoms in the first several weeks after a traumatic event predict chronic post-traumatic difficulties. For example, several longitudinal studies of motor vehicle crash survivors have documented the predictive utility of ASD for identifying those individuals who are likely to exhibit a more enduring or persistent mental health disorder. Harvey and Bryant[15] evaluated motor vehicle crash survivors within one month of their crash for the presence of ASD. Seventy-eight percent of those who met diagnostic criteria for ASD within one month of their accident met diagnostic criteria for PTSD at a six-month follow-up.

The degree to which ASD predicts chronic response to disasters and/or terrorist events remains an empirical question. Arguably, both the prevalence and predictive utility of ASD would be higher in direct victims of disasters or terrorist events, given the depth and breadth of trauma exposure and losses of resources. Thus, it may be particularly prudent to devote early interventional resources to identifying victims who endorse sufficient symptoms and impairment (ASD) so that interventions can be offered that would reduce risk for the development of chronic post-traumatic difficulties.[16]

Although the diagnosis of ASD is imperfect (people without an ASD diagnosis may develop PTSD), there is good evidence that people who have ASD are at serious risk for development of chronic PTSD. Although there are a variety of risk indicators for chronic PTSD (e.g., exposure to loss of life, childhood trauma exposure pre-existing psychiatric problems, gross social isolation), to date, there is a general consensus that the most practical and parsimonious method for identifying those at risk for chronic post-traumatic functional disturbances and PTSD is the presence of ASD. Arguably, this is the most valuable clinical benefit of the ASD construct. If a diagnosis of ASD is used as a main inclusion criterion for formal, secondary prevention efforts, it may help minimize risk of offering costly, scarce, and demanding early interventions to those who may not need them.

In this context, cognitive-behavioral therapy has been shown to be a highly efficacious, secondary prevention intervention. For example, Bryant and colleagues conducted a randomized, controlled trial of cognitive-behavioral therapy (in comparison to supportive counseling) with survivors of motor vehicle crashes and non-sexual assaults who met the criteria for ASD.[17] Both interventions consisted of

five, one and one-half hour, weekly, individual therapy sessions. Cognitive-behavioral therapy included education about post-traumatic reactions, relaxation training, cognitive restructuring, and imaginal and *in vivo* exposure to the traumatic event. The supportive counseling condition included trauma education and more general problem-solving skills training in the context of an unconditionally supportive therapeutic relationship. At a six-month follow-up, there were fewer participants in the cognitive-behavioral therapy group (20%) who met diagnostic criteria for PTSD as compared to the supportive counseling group (67%).

In a subsequent study that dismantled components of cognitive-behavioral therapy, 45 civilian trauma survivors with ASD were allocated randomly to five sessions of either: (1) cognitive-behavioral therapy (prolonged exposure, cognitive therapy, anxiety management); (2) prolonged exposure combined with cognitive therapy; or (3) supportive counseling.[18] At the six-month follow-up, PTSD was observed in approximately 20% of both active treatment groups compared to 67% of those receiving supportive counseling. Perhaps the most impressive result was that treatment gains of those who received cognitive-behavioral therapy were maintained at the time of a four-year follow-up.[19]

To date, cognitive-behavioral therapy is the only intervention that has been shown in methodologically strong research to prevent the development of PTSD. There have been a few initial efforts to apply such cognitive-behavioral therapy interventions in the aftermath of disaster, but additional work is necessary to explore the impact of adapting elements of this intervention for use with survivors of disasters or terrorist attacks.

Post-Traumatic Stress Disorder

Large-scale epidemiological research has indicated that PTSD is among the most prevalent psychiatric diagnoses for survivors of violent or traumatic events, such as sexual or physical assault, severe motor vehicle crashes, and disasters due to natural hazards.[20–22] Data from national probability samples place the lifetime prevalence of PTSD at approximately 8% in the general population,[20] between 10–13% among women,[20,22] and at approximately 8% among youth.[23] Emotional and behavioral reactions associated with PTSD include frequent re-experiencing of the event (e.g., physiological reactivity to reminders, intrusive thoughts, nightmares), persistent avoidance of trauma-relevant stimuli (e.g., activities, places, people, conversations), and persistent hyperarousal (e.g., exaggerated startle response, sleep disturbance, concentration difficulties). To avoid pathologizing emotions and behavior during the natural recovery process following exposure to traumatic events, PTSD cannot be diagnosed unless these symptoms are present at clinically elevated levels (causing significant distress or impaired functioning) for at least one month after the stressor event has occurred.[24]

The current structure of cognitive-behavioral interventions for PTSD has been influenced by numerous theoretical and empirical contributions to the literature spanning several decades.[25,26] Cognitive-behavioral treatment packages include anxiety management and emotion-regulation training, exposure-based procedures, and cognitive restructuring. Anxiety management training consists of a variety of techniques designed to reduce anxiety by teaching skills that aim to reduce anxious responses. Anxiety management training strategies include breathing retraining, progressive muscle relaxation, calming self-talk, distraction techniques, psychoeducation, and biofeedback.[27] Exposure-based procedures are designed to encourage the trauma survivor to confront or approach external stimuli or situations and verbal/imaginal stimuli associated with their traumatic experiences. Exposure therapy helps reduce intense negative affect, avoidance behavior, and arousal through the process of learning new associations to trauma-related cues. Exposure can be conducted imaginally through the verbal description and imagining of traumatic experiences, or *in vivo*, through real-world exposure to situations that resemble those in which the traumatic event occurred. *Cognitive restructuring* involves a systematic approach to identifying, noticing, and challenging negative trauma-related thoughts and beliefs, and practicing replacing them with more adaptive ways of thinking.

By comparison with other treatments for PTSD, cognitive-behavioral interventions have received the most empirical study and support to date. Controlled trials conducted over the past two decades have demonstrated the efficacy of cognitive-behavioral interventions in reducing symptoms of PTSD stemming from a variety of events.[28–30] There also is evidence that cognitive-behavioral therapy is effective for victimized youth.[31–37] Indeed, cognitive-behavioral therapy is specifically recommended as a front-line treatment for PTSD in various clinical practice guidelines.[38–43]

Despite this body of evidence, little work has been conducted to investigate the impact of cognitive-behavioral therapy with survivors of disaster and terrorism. Although it is likely that research on cognitive-behavioral therapy for PTSD, as well as cognitive-behavioral perspectives on traumatic stress more generally, can inform developments in disaster mental health, these two literatures are largely isolated from one another. Thus, future efforts are needed to cross-fertilize these two fields and build upon existing knowledge in a way that strengthens the quality of care provided to terrorism and disaster survivors following trauma.

Anxiety

Anxiety is a common response to exposure to disaster and terrorist threats. The fear of a recurring disastrous event, legitimate concerns about various resource losses, and an inability to reduce the occurrence of negative thoughts and images about the trauma, can lead to significant worry and rumination, which is at the core of generalized anxiety disorder (GAD). Additional symptoms frequently experienced in GAD include irritability, restlessness, muscle tension, fatigue, sleep problems, and concentration difficulties.[24] Other anxiety disorders that have been shown to manifest themselves in the aftermath of disaster and terrorism include separation anxiety in children and panic disorder. In addition, the stress of a disaster can exacerbate pre-existing anxiety conditions, such as obsessive-compulsive disorder or specific phobia, in the same way that stress may trigger pre-existing somatic conditions.

Given the ubiquity of anxiety in the aftermath of disasters and terrorist attacks, and the demonstrated utility of cognitive-behavioral methods in reducing anxiety symptoms,[11] anxiety management strategies should be applied more widely with survivors of these types of events. In fact, it is quite likely that some within the disaster mental health community have been using variations of cognitive-behavioral methods (e.g., relaxation training) without necessarily labeling them as such. Some elements of cognitive-behavioral therapy that might be employed to reduce post-disaster anxiety include relaxation procedures (particularly effective with generalized anxiety disorder), diaphragmatic breathing (useful with panic disorder), and cognitive therapy/restructuring. Consistent with this possibility, Somer *et al*[44] found that a 15-minute, cognitive-behavioral anxiety management intervention, administered by telephone, was more effective than standard hotline counseling in reducing distress, anxiety, and worry about missile attacks among Israeli citizens.

Substance Abuse and Dependence

A range of emotional experiences, including sadness, anxiety, and anger, commonly occur following trauma. These aversive emotional experiences and catastrophic or overly negative appraisal of such states, may lead to attempts to avoid distressing trauma-related feelings and thoughts. One quick avenue for relief is the use of substances, including alcohol and illegal drugs. While these attempts at avoidance may decrease immediate distress, they also may interfere with cognitive-emotional processing and reduce the ability to take action that is consistent with recovery from the trauma.[45] There is a strong link between PTSD and substance abuse or dependence;[46–49] it appears that trauma often precipitates or exacerbates drug and alcohol abuse.[20,50,51]

Multiple cognitive-behavioral interventions have been effective in reducing substance abuse,[52] and those that have integrated treatment of PTSD and substance abuse appear promising in their effectiveness in reducing both sets of problems.[53,54] Of special relevance following disaster-producing events and terrorist attacks may be the development of brief evidence-based cognitive-behavioral therapy interventions aimed at reducing alcohol consumption.[55] Some of these have been used to the benefit of survivors of recent traumas,[56] and it is possible that a number of cognitive-behavioral interventions for alcohol problems can be adapted for use in disaster mental health settings. Brief assessments that identify and target high-risk drinking or substance use may prove useful. If a survivor is found to be at risk, a number of educational and coping skills strategies designed to target substance abuse and stress reactions may help the individual to better cope with post-trauma problems. Self-efficacy and motivation-building approaches also may strengthen victims' resolve and ability to resist alcohol or other substances, as might the establishment of self-acceptance and peer support networks.

Depression

Major depression is one of the most commonly diagnosed psychiatric disorders in individuals who have experienced a traumatic event,[57] and co-occurrence of major depressive disorder and PTSD is extremely high.[58] In some studies, concurrent rates of PTSD and major depressive disorder have been as high as 65%, with lifetime prevalence rates of co-morbid PTSD and major depressive disorder of approximately 95%.[59] Given that co-morbid depression may increase risk of prolonged/chronic PTSD[60] and create complications in its own right, reduction of depressive symptoms is imperative.

Cognitive behavioral therapy packages for depression commonly include a number of components. The primary focus of most cognitive-behavioral therapies is teaching clients specific skills.[61] One such skills-oriented strategy for addressing depression is behavioral activation. The principles underlying behavioral activation posit that depression is a consequence of reduced access to reinforcement following changes in an individual's life circumstances.[62] Following a traumatic event, a person may stop engaging in previously enjoyed activities, limit social interactions, and engage in other avoidance behaviors that reduce contact with potential natural reinforcers that otherwise would promote recovery. Behavioral activation treatment assists the individual in identifying coping patterns that exacerbate depressive symptoms and to develop a plan for improving coping strategies and providing access to more reinforcing life circumstances.[63] The primary change agent in behavioral activation is simple (and therefore, transferable to many disaster contexts): increasing the frequency with which a person engages in pleasurable and healthy activities. Behavioral activation requires clients to first chart their daily activities to determine behaviors that are linked to mood improvement. Information from activity charts is used to plan activities that are associated with pleasure and mastery.[64]

Another common component of cognitive-behavioral therapy involves working with clients to identify and test negative thoughts that may be maintaining depressive symptoms.[65,66] Clients are taught how to use a *thought record*. Within and outside of sessions, they are asked to record problematic thoughts, antecedent events, and behavioral consequences that follow from the negative thought patterns. Using the technique of guided discovery, therapists work with clients to help them question depressive, automatic negative thoughts and learn to counter the negative biases and replace them with more balanced and useful thinking patterns. *Behavioral experiments* often are used to help clients test their negative assumptions in real world situations and to build evidence in favor of the alternative thoughts and beliefs.

Finally, cognitive-behavioral therapy packages for depression often incorporate a problem-solving component. Clients are taught to be active in their approach to solving problems. Problems are broken down into components that can be tackled one part at a time using any of several available multi-step procedures that typically include problem identification, brainstorming alternative solutions, choosing and implementing a solution, and evaluating outcome.

The use of cognitive-behavioral therapy for depression is not indicated in the immediate aftermath of terrorist and disaster-producing events because dysphoria and disen-

gagement are normative (survivors not only have more pressing concerns, but they may not be able to focus on intensive and sustained therapies of any kind).[67] However, once safety, housing, and other acute needs have been addressed, application of cognitive-behavioral therapy for depression should be considered as a secondary prevention for those survivors with severe hopelessness and depression.

Anger and Interpersonal Conflict

Anger, irritability, and hostility have been associated with exposure to a number of different types of trauma, including combat, interpersonal violence, and disasters caused by natural hazards.[68–73] When anger reactivity is heightened, it may lead to difficulties in anger control (i.e., verbal and physical aggression)[74] and impair interpersonal relationships,[75,76] thereby estranging the survivor from the very interpersonal support that may be critical to recovery. Alternately, as a symptom of PTSD, excessive irritability and anger control difficulties may be targets for treatment in their own right.[77] Regardless, cognitive-behavioral therapy strategies that directly address anger and interpersonal conflict are important adjuncts to trauma-focused interventions for persons who have experienced disaster or terrorist-related events.

In general, research on the effectiveness of cognitive-behavioral therapy targeting anger-related difficulties in PTSD is limited, and most approaches to treating PTSD do not specifically target anger symptoms. One study by Cahill *et al* found that prolonged exposure, stress inoculation training (SIT), and a combined prolonged exposure/SIT intervention all led to decreased levels of state anger, as compared to a wait-list control group, even though anger was not a specified treatment target.[78] Novaco and Chemtob[79] successfully adapted the stress inoculation approach originally developed by Novaco[80,81] to target anger-control problems in veterans with PTSD.[77]

Anger-control interventions share features common to most cognitive-behavioral therapy: psycho-education and self-monitoring, identifying and targeting behavior in the context of specific situational triggers of frustration or conflict, and applied coping and affect management skills training (e.g., relaxation training).[82,83] Cognitive behavioral therapy-based anger interventions also employ thought stopping,[84] communication and assertiveness training,[85,86] problem-solving training,[87] and urge control.[88]

Cognitive restructuring also is a critical element of anger interventions. In the aftermath of disasters or terrorist attacks, individuals may develop faulty beliefs about the causes of the event and about self or other responsibility for preventing or reducing consequences of the event.[79] Statements such as, "We shouldn't allow foreign travelers into this country", or, "I should have known there was a problem", or, "If only I had kept Jenny home from school that day", may characterize such faulty beliefs. These irrational beliefs may trigger anger, irritability, and aggression in response to people who have no direct responsibility for the traumatic event and or situations that are not associated with actual danger. As noted, cognitive restructuring teaches clients to modify appraisals in order to reduce distorted perceptions of threat/danger or causation that may lead to anger reactivity.

Cognitive-Behavioral Therapy Interventions with Survivors

Preliminary studies of the use of cognitive-behavioral therapy with survivors of disasters or terrorist attacks are promising and suggest a level of efficacy equal to that demonstrated with other types of trauma. A number of interventional studies that lend support to the use of cognitive-behavioral therapy immediately following disaster-producing events and terrorist attacks are reviewed. These studies are divided into disaster versus terrorism-related studies.

Interventions During and Following Disasters

While some cognitive-behavioral interventions for survivors of disasters or terrorist attacks have been described,[89–94] most have not been formally evaluated. Goenjian *et al* examined a school-based, brief trauma/grief-focused therapy for early adolescents who had been exposed to the 1988 Armenia earthquake.[35] Eighteen months following the event, 64 adolescents (on average, 13 years old) from four severely damaged elementary schools participated in the program. All had directly witnessed mutilation, death, and destruction during the event, and all had sustained losses. Of the 64 adolescents, 35 (from two of the schools) underwent the brief treatment. This group was compared to the remaining 29 students (from the other two schools) both before the treatment and in long-term follow-up periods (1.5 and 3 years following treatment). The treatment was composed of four group sessions and a variable number of individual sessions (depending on severity) provided during a six-week period. The intervention entailed reprocessing of the trauma, addressing traumatic reminders, managing post-disaster stress and adversity, discussing bereavement and grief, and addressing missed developmental opportunities, using cognitive-behavioral therapy techniques such as imaginal exposure, cognitive therapy, desensitization, and stress management. Adolescents in the treatment group had lower post-traumatic stress symptoms at follow-up. In contrast, the adolescents who did not receive treatment had increased symptoms over time. This study suggests the cross-cultural applicability of trauma-focused cognitive-behavioral therapy interventions.

Basoglu *et al* conducted a large-scale, open trial of brief behavioral treatment for survivors of the 1999 earthquake in Turkey.[95] A total of 231 clinically referred survivors, 72% of whom met criteria for PTSD, received 1 to 17 sessions of treatment (mean = 4.3 sessions), with treatment ending when clinical improvement was achieved (22% terminated treatment early). Treatment was delivered at a mean of 13 months after the earthquake, and consisted of self-directed, *in-vivo* exposure to trauma reminders. The intervention led to significant reductions in PTSD symptoms. Clinical improvement was evident in the majority of cases after the first two sessions, suggesting that a very brief behavioral intervention may be efficacious for disaster survivors. The follow-up sample continued to demonstrate significant improvements across all symptom measures, with large effect sizes, suggesting maintenance of treatment gains. The majority of therapists in the study had no prior clinical training or training in

cognitive-behavioral therapy, and had only received one month of training in the intervention before the study (along with supervision throughout the study). This suggests that, in the immediate aftermath of a disaster-producing event, cognitive-behavioral therapy may be relatively easy to disseminate with little background in cognitive-behavioral therapy.

In a later study, Basoglu *et al* treated earthquake survivors suffering from PTSD, comparing a one-hour cognitive-behavioral intervention (n = 31) to a wait-list control condition (n = 28).[96] The brief treatment consisted of identification of problems, explanation of treatment rationale, treatment target setting, and self-exposure, and focused on increasing sense of control over earthquake-related fears and reminders. Significantly better outcomes for the treatment group were obtained in a range of measurement domains (e.g., post-traumatic stress symptoms, fear and avoidance, and depression at post-treatment), and treatment effects were maintained out to two year follow-up.

Interventions Following Terrorist Attacks

Gillespie *et al* conducted an open trial of cognitive therapy with survivors of the 1998 Omagh bombing in Northern Ireland.[97] Ninety-one participants who met criteria for PTSD as a result of the bombing received 2 to 78 treatment sessions (*M* = 8). The treatment focused on imaginal exposure coupled with cognitive reappraisal. Seventy-eight participants completed standardized symptom measures pre- and post-treatment and demonstrated significant improvement on all measures (the effect size was 2.47, comparable to or larger than other cognitive-behavioral therapy trials; Van Etten and Taylor, 1998). As in the study by Basoglu *et al*,[95] therapists in this study had no previous experience treating trauma and received minimal training and supervision by experts during the treatment—again suggesting that this intervention could be readily disseminated.

The terrorist attacks on the World Trade Center and Pentagon of 11 September 2001 set into motion a number of initiatives to apply cognitive-behavioral therapy.[98,99] In one effort, cognitive-behavioral therapy was delivered to some survivors of the World Trade Center attacks approximately 18 months after the attacks as part of an "enhanced" service offered under the auspices of the *Project Liberty* crisis counseling programs.[100,101] Comprised of psycho-education, coping skills training, cognitive restructuring, and delivered in 9–12 sessions, the intervention was provided to users of crisis counseling services who screened "positive" on a paper-and-pencil screening tool. Clinicians reported that this intervention was well received by clients,[102] and more formal evaluations are underway. Cognitive behavioral therapy interventions also have been delivered to emergency workers who responded to the attacks at the World Trade Center of 11 September 2001.[103]

Levitt *et al* reported on an effort to train community-based counselors to deliver Skills Training in Affective and Interpersonal Regulation/Narrative Trauma Processing.[98,104] Seven providers (including master's level social workers and clinical psychologists) were trained in the intervention during a two-day workshop, followed by weekly group supervision. They then provided treatment to September 11th survivors in New York who were experiencing psychological distress and symptoms of PTSD (not necessarily meeting full diagnostic criteria for PTSD). Treatment began one year after the terrorist attacks, and consisted of an average of 18 individual sessions targeting emotion management skills (e.g., self-monitoring, distress tolerance), interpersonal skills (e.g., communicating feelings with others, enlisting social support), and imaginal exposure. The treatment was effective in reducing symptoms of PTSD, depression, hostility, interpersonal sensitivity, and use of alcohol/drugs to cope. This work demonstrated that providers can be trained to adapt evidence-based treatments to their own delivery preferences and situational constraints. Providers were permitted to "adjust the dose" by repeating protocol sessions as needed, by eliminating sessions judged to be inappropriate for the individual, and by spending time attending to issues that were not the primary focus of the manualized intervention.

Neria and colleagues[99] provided systematic training and supervision in prolonged exposure therapy for PTSD[105] for New York City trauma therapists. Training was initiated approximately two months after the September 11th attacks; over a 12-month period; >500 local clinicians were trained.

Addressing Some Common Challenges in Disaster Mental Health with Cognitive-Behavioral Therapy

As detailed above, the goals and practices of disaster mental health are compatible with cognitive-behavioral theory and practice, cognitive-behavioral therapy is being adapted for use following disasters and terrorist attacks, and initial evaluations suggest the potential utility of these approaches. Some ways that cognitive-behavioral therapy methods of behavior change could be systematically employed to target and meet some key behavior change goals of disaster mental health follow.

Normalizing Acute Stress Reaction

A critical goal of disaster mental health is to help survivors recognize and accept that traumatic stress responses are common during the first days and weeks after disasters and/or terrorist attacks, and that occurrence of such responses does not mean that a survivor is "weak", "damaged", or "going crazy". In essence, the goal of normalization is concerned with the modification of beliefs and appraisals and, as a result, cognitive-behavioral therapy methods can be brought to bear. It often is sufficient to simply tell survivors that what they are going through is to be expected and not a sign of something dangerous; this helps set them at ease and allows them to focus on the tasks of recovery. However, among some survivors particularly at-risk for the development of PTSD, this approach may be insufficient. Instead, if appropriately timed, elements of cognitive-behavioral therapy interventions can be used to accomplish normalization through directly addressing negative interpretations of reactions using cognitive therapy and teaching simple, deep diaphragmatic breathing to reduce the intensity of arousal and increase perceptions of controllability.

Improving Coping

Much of disaster mental health is concerned with encouraging survivors to increase adaptive coping behaviors (e.g.,

adequate diet, sleep, and exercise) and to avoid or reduce maladaptive coping (e.g., consumption of caffeine, nicotine, or alcohol; social isolation). Research has shown that simple verbal direction to increase or reduce specific actions is not the most effective way to change behavior. The methods of skills training, including modeling, behavior rehearsal, coaching feedback, real-world practice, and self-monitoring, might be used to enhance the ability of service providers to shape the coping behaviors of survivors.

One important component of coping is anxiety management. Somer and colleagues[44] demonstrated the feasibility of teaching survivors skills for reducing anxiety—a single session of telephone-delivered anxiety management training decreased anxiety among Israeli citizens worried about the possibility of a SCUD missile attack. Citizens distressed about possible SCUD attacks were randomized to either a phone-based cognitive-behavioral therapy intervention or standard hotline counseling (i.e., unconditional positive regard, empathic listening, validation, social support). The cognitive-behavioral therapy intervention lasted about 15 minutes, and included normalization of stress responses, instruction in diaphragmatic breathing and cognitive restructuring, practice of these techniques while still on the telephone, and assignments to continue practicing at home. When evaluated three days after the hotline contact, the cognitive-behavioral therapy intervention was associated with significantly less distress, anxiety, and worry about missile attacks than was the standard hotline counseling protocol.

Mobilizing and Increasing Social Support

Survivors of disasters typically do not seek counseling from mental health workers. Instead, they often turn to family and community networks for support.[1] Although the role and importance of natural social supports as sources of emotional comfort, instrumental support, and information generally is accepted, how best to support this natural process is a critical question for disaster mental health. Currently, counselors tell survivors to support one another and sometimes bring together survivors in groups. It is likely, however, that these are not optimal means for increasing support behaviors. Cognitive-behavioral interventions designed to facilitate social problem-solving and functioning might be usefully adapted for application in post-disaster contexts. Cognitive behavioral therapy approaches to the improvement of marital, couples, and family functioning; conflict resolution; social problem solving; and parent-adolescent communication might be explored for their applications to the aftermath of disaster and/or terrorism. For chronic post-trauma problems, cognitive-behavioral interventions focusing on adult couples,[106,107] and parent-child dyads[108] have been developed. It may be possible to modify elements of these approaches for use in early preventive interventions for disaster and terrorism survivors.

Detecting Problems and Referring for More Intensive Services

Mental health responders, together with disaster workers and medical professionals on the front line, play an important role in identifying persons at risk for development of problems who may benefit from monitoring or referral for early psychological intervention. Brief, valid, self-administered screening tools appropriate for use in the wake of disasters and terrorist attacks have yet to be developed. However, some tools have been developed for other intervention contexts and require exploration in the context of disaster and terrorism.[109] Validated screening tools that enable identification of more chronic PTSD have been developed by cognitive-behavioral researchers, and are appropriate for use several months after an event.

Following the World Trade Center attacks in New York, *Project Liberty* utilized a paper-and-pencil screening tool that was used to identify those persons who might benefit from a referral for more specialized cognitive-behavioral therapy. Also in New York, Difede and colleagues[103] developed a screening program for the emergency relief workers who responded to the attacks. With regard to screening for excessive alcohol consumption, screening tools exist, and brief interventions are effective, but there is a need to explore the feasibility and impact of implementing screening protocols more widely with recently traumatized persons.

Motivating Survivors to Seek Help and Use Resources

Many of those who might benefit from use of helping services, including some with high levels of PTSD symptoms, do not seek help. For example, families experiencing grief following the Lockerbie, Scotland bombing reported: (1) thinking that they could handle it on their own with help from family, friends, and their religious faith; that mental health counseling was a sign of weakness or stigma; (2) that they could not financially afford counseling; or (3) that they could not admit to having a problem.[110] Difede *et al* reported that, among emergency services workers who responded to the World Trade Center collapse, distress at trauma reminders was seen as a normal reaction to the events and not a reason to seek mental health services.[103]

For various survivor groups, pragmatic approaches to increasing accessibility of services have been developed, but not formally evaluated. Relatively little is known about how survivors make decisions about self-referral for services, how to encourage use of services, or how to increase acceptance of referral for more intensive intervention. A cognitive-behavioral therapy framework might be usefully applied to these issues. For example, the motivational interviewing methods[111] that have become widely accepted as a means for engaging individuals in treatment might be adapted to the contexts of disaster outreach (in which helpers make contact with survivors in emergency shelters, shopping malls, and so on). Peer counseling programs, now very common in professions with expected trauma exposure (e.g., police, military, emergency response personnel), might be utilized in community settings in which mental health professionals might struggle to achieve acceptance.

As noted earlier, cognitive-behavioral therapy interventions have features that may make them palatable to survivors, including an emphasis on problems of the "here and now," a non-pathological view of the emotional problems faced in the aftermath of disaster and/or terrorism, and a view of the client as a respected partner (an "expert" in one's self) in the work of recovery. Compliance with mental health referrals may be improved by emphasizing the efficacy and positive effects of

intervention, explaining the basic components of cognitive-behavioral therapy actively drawing the survivor into participation in their own recovery (and that of their family and friends), and simple appointment reminders.

Delivering Small Group Support Services

The primary current model of early group intervention to reduce the impact of trauma is "stress debriefing" or "critical incident stress debriefing".[112,113] However, there is no evidence that this approach to early intervention is useful or effective,[2,67] and group cognitive-behavioral therapy holds the promise of providing an effective alternative. However, cognitive-behavioral therapy has not infiltrated the emergency services culture or employee assistance programs. In these contexts, the debriefing model typically is quite entrenched because it is cogent and highly respectful of, and integrated into, various work cultures. There is no reason that cognitive-behavioral therapy programs could not be adapted in a similar manner.

Increasing Integration of Mental Health Care in Primary Care and Emergency Medicine

Because many disaster survivors—and especially those of terrorist attacks—can be expected to present for help in medical settings, it is important to explore ways of increasing identification of disaster problems and appropriate intervention or referral in primary care and emergency medicine settings. Cognitive behavioral therapy methods have been integrated into primary care medicine settings to address a variety of problems, including depression,[114] panic,[115] and excessive alcohol consumption.[116] It is possible that these approaches could be modified for the disaster environment. For example, Resnick *et al* implemented a cognitive-behavioral therapy prevention protocol for sexual assault survivors at the time that they presented to the emergency department.[117] The women met with a rape crisis counselor, then watched a video that familiarized them with the forensic rape examination. Subsequent to the examination, they watched a video that discussed possible symptoms that they would experience over the coming weeks, how to recognize and prevent related avoidance behaviors, procedures for conducting exposure exercises on their own, and a range of coping strategies that they could use. A protocol such as this could be developed for survivors of disasters and/or terrorist attacks for use in emergency and primary care settings. It would be important to combine such efforts with the use of brief screening tools for PTSD that have been validated for use in the primary care setting[118] in order to assist in identification of individuals with—or at-risk for—this disorder (PTSD).

Developing Cost-Effective Delivery Systems

While there has been little systematic effort to use the Internet to help trauma survivors, this situation is changing, and several reports provide initial demonstrations of the feasibility of delivering cognitive-behavioral, Web-based interventions to traumatized populations. A writing-based, cognitive-behavioral protocol delivered to college students over the Internet ("Interapy") was associated with significantly lower intrusion and avoidance symptoms, lower general psychopathology scores, and greater improvement in mood, as compared to a wait-list control. These gains were maintained or improved upon at a six-week follow-up.[119] Lange *et al* also provided their five-week, Web-based writing treatment to a sample of Dutch Internet users with PTSD symptoms.[120] They found greater reduction in PTSD symptoms such as anxiety, depression, somatization, and sleep problems among treated participants than among those assigned to a wait-list control condition. Similarly, Litz *et al* described a cognitive-behavioral, therapist-assisted, Internet-based, self-help intervention designed to enable the treatment of large numbers of traumatized individuals, using a form of stress-inoculation training for the secondary prevention of PTSD and treatment of the chronic disorder.[16] In an application of a Web-based approach with terrorism survivors, Ruggiero *et al* developed and tested an Internet intervention for mental health and substance abuse with 285 New York City residents participating in a longitudinal research study following the World Trade Center attack of 11 September 2001.[121] The study was conducted two years after the attacks, and the intervention contained screeners and helping modules focusing on PTSD, panic, depression, worry, and substance use (alcohol, marijuana, drug, and smoking modules). Significant positive pre-post knowledge change was observed in several of the modules, and participant satisfaction was high for all modules.

Promoting Development of Empirically Supported Disaster Mental Health Care

Increasingly, it is recognized that disaster mental health practice should be informed by empirical knowledge and that disaster mental health services require formal evaluation.[122] Yet, interventions that are delivered worldwide in the acute aftermath of large-scale disasters or terrorist attacks have not been validated by clinical trials comparing efficacy of different intervention strategies (or non-intervention) under such circumstances. In the absence of such studies, it remains unclear how best to design mental health responses to disasters.

It can be argued that, given the lack of an empirical literature on acute interventions during and following a disaster, mental health interventions should be guided by clinical wisdom or on the basis of precedent. However, acting without empirical support at best may constitute an inefficient use of limited resources where the possibility exists that some—or even most—services are unnecessary or contraindicated. In the aftermath of the terrorist attacks of 11 September 2001 for example, a disaster psychiatry outreach group dispensed benzodiazepines at the Family Assistance Center, and police and fire departments provided mandatory debriefings to all uniformed service personnel (without the option of refusing such interventions). At worst, unsupported services may disrupt the normal recovery process or have more serious iatrogenic effects.

A related issue of concern is that most mental health practitioners operating in typical mental health settings, do not use empirically supported treatments for their trauma patients. For example, Becker *et al* found that while half of several hundred practicing psychologists that responded to their survey were "at least somewhat familiar" with the use of

imaginal exposure therapy for PTSD, only 17% actually used this empirically supported treatment with their patients with PTSD.[123] Of the one-third who had training in imaginal exposure, only one-half used it. This begs the question: how can we hold practitioners to a higher standard than "business as usual" in the face of the overwhelming mental health needs associated with a large-scale disaster or terrorist attack? What is problematic here is not so much a matter of whether or not specific historical practices are ill advised. Rather, in the absence of conducting the necessary empirical research, discourse surrounding the appropriateness of "usual" practices is limited by absence of data.

A countervailing argument is that mental health responses should be guided by the empirical treatment literature on PTSD and acute stress disorder.[1] This view is based on the proposition that relying on existing literature for information about the treatment of trauma survivors provides the highest standard of knowledge and care even when the conditions under which clinical trials are performed do not resemble those encountered in disaster service environments.

It is relatively easy to make the argument for the necessity of delivering interventions that are supported by research. What is more difficult is delineating the kinds of data that can be obtained reasonably and can guide mental health interventions and pass the rigorous standards that science has imposed for obtaining this information in a methodologically sound manner. Performance of methodologically valid intervention research after a large-scale disaster will require much forethought and preparation;[124] studies will have to be designed, evaluation and outcome measures chosen, and helpers trained and supervised far in advance of a disaster or terrorist attack, and must be at the ready when disasters occur. The situation of a disaster mandates that treatment researchers become more innovative in re-conceptualizing how to learn from disaster. The mandate is to systematically evaluate interventions that can be implemented on a large scale in community settings.

Recommendations

Following the terrorist attacks of 11 September 2001, many cognitive-behavioral practitioners involved themselves in offering support to survivors. When the September 11th Fund was established to aid victims of the attacks in obtaining mental health care, the Association for Behavioral and Cognitive Therapies partnered with LifeNet, coordinator of the Fund, to aid those individuals interested in receiving cognitive-behavioral therapy to link with trained providers. However, if the concepts and intervention methods of cognitive-behavioral psychology are to be used more systematically to improve services in future terrorist and disaster events, more must be done. It will be important to improve connections between cognitive-behavioral therapy providers and disaster mental health services, to increase communication between disaster mental health agencies and the Association for Behavioral and Cognitive Therapies, and to foster involvement of cognitive-behavioral therapy professionals in disaster mental health research. The Association for Behavioral and Cognitive Therapies is committed to helping survivors of disaster and terrorism obtain appropriate, effective, and timely empirically supported services. As such, the following recommendations are provided as a means of expanding the discussion, developing and modifying cognitive-behavioral therapy-based interventions for survivors of disasters and terrorist attacks, and supporting needed empirical research.

Expanding the Discussion

1. The disaster mental health community and cognitive-behavioral therapy practitioners and researchers should communicate and collaborate in order to clearly specify their particular models of care, seek common ground, and plan joint efforts for the response to future disasters and terrorist activity. This may be accomplished through association conferences (e.g., Association for Behavioral and Cognitive Therapies, International Society for Traumatic Stress Studies), committees and consensus panels, joint publications, and collaborative research grants).
2. As a reflection of the field itself, this paper has focused on adult survivors of disasters or trauma. Efforts must be made to address the post-traumatic needs of child and adolescent survivors; family units; and a whole host of special populations, including the elderly, persons with developmental disabilities or chronic mental illness, persons with physical or medical disabilities, and persons of diverse cultural and ethnic backgrounds. This will require the collaboration of experts in this range of fields and sub-specialties on panels, presentations and publications, research efforts, and disaster/terrorism response planning initiatives.

Developing Interventions

1. Early intervention protocols must be developed based on: (1) theoretical models, preferably with empirical support, that incorporate risk and resilience factors, age and developmental status, gender, ethnic and cultural diversity, the characteristics of special populations, and work cultures; (2) existing intervention strategies that have empirical support for use in typical therapy settings at various points in time post-event (i.e., weeks, months, years) and with a range of trauma populations (e.g., motor vehicle crashes, sexual assault, combat, traumatic grief); and (3) knowledge of the phases of disaster that would help to determine the optimal time frame for the delivery of different forms of intervention.
2. Interventions must be developed that can be delivered at various system levels, including the individual level, couples and families, and groups of "coincidence" (e.g., exposed to the same aspect of an event, experienced the same type of loss, responded to the event, or were members of a pre-existing group, such as a church, place of employment, or neighborhood) rather than just of "convenience" (e.g., persons presenting to a service center at a particular point in time).
3. Assessment protocols must be developed that include a range from brief screenings through full evalua-

tions. Of greatest need for the timely delivery of early intervention will be the development of brief screening assessments. It will be important that the brief screening assessments not only include symptoms, but areas of functioning and indices of exposure and loss, as these are key risk factors. A mechanism for easy—and confidential—distribution and collection of screening assessments will be needed, with the possibility of requesting several screens over a period of weeks to months.

4. Interventions (as well as screening mechanisms) must address the wide range of post-event reactions and problems, not just acute stress disorder and PTSD. Thus, the behavioral, cognitive, and physiological symptoms of depression, grief and bereavement, substance abuse and dependence, and other anxiety disorders must be addressed. Protocols likely will be needed for persons with pre-existing disorders (e.g., chronic mental illness) that may be exacerbated by the events.
5. Interventions that are described as *psychological first aid* must be developed more fully and tested for use in the impact (relief) phase of a disaster or terrorist event.[67,125] Such interventions primarily focus on support, safety, meeting basic needs (food, water, shelter), and orientation as to what to do and where to go. This also may prove to be a time for completing brief screening assessments and making first mention of the availability of mental health services, but likely not a time for complex psychological interventions.
6. Early intervention has focused on what to do at some proximal time point *after* the event. There has been little attention paid to the area of *pre-event preparedness*. Efforts must be made to inform and educate the general public *before* a disaster or terrorist attack (especially in those geographic regions most likely to experience one or the other or both) as to what they might expect from a psychological perspective in terms of symptoms, time-course, and risk; and what they will be able to do to address any psychological issues post-event, such as information on coping skills, social support, and therapy options. This would entail media campaigns to initially inform the public and to make fuller educational materials available on the Internet and print or DVD formats. Grant funding could be sought to evaluate such efforts on a small scale to determine their feasibility and effectiveness. Collaboration would be sought from social psychologists, sociologists, and other specialists in communications. The primary goal would be awareness and receptivity to effective helping programs post-event.

Supporting Research

1. Intervention research should include a range of strategies beyond those of cognitive-behavioral therapy. This is necessary to fully demonstrate—from the full range of options—what does and does not effectively address specific outcomes in the aftermath of disaster-causing events and terrorist attacks. At present, most cognitive-behavioral therapy research compares a specific cognitive-behavioral therapy package to medication, a "supportive" but inactive therapy of equivalent duration, or wait-list, or no-treatment controls. Collaborative projects that include comparisons of cognitive-behavioral therapy against bona fide delivery of early interventions by the experts with other perspectives will be the best and fastest way to empirically separate "the wheat from the chaff".
2. As research provides evidence-based support for particular interventions, it will be important to disseminate those interventions to a wide-range of practitioners. Thus, dissemination research will be critical to determine the transportability of interventions from the experts who developed it to the practitioners in the field, and to determine the optimal methods for dissemination (such as various combinations of manuals, workshops of varying durations, Internet-based training, periodic retraining, and distance or on-site supervision and consultation).
3. A full range of research designs should be utilized to evaluate intervention efficacy, from the lauded randomized, controlled, clinical trials to an extended series of well-controlled single-case designs. There should be a focus on quantitative data, but not to the exclusion of properly collected qualitative data. A movement beyond self-report data also is recommended as the nearly exclusive reliance on quick self-report measures limits researchers to indirect measures (including interviews) that can be biased by the need to recall how one was feeling "last week", and open the door to expectancy effects and other challenges to validity. Reports of significant others (e.g., spouse, teacher), clinician evaluations (observational checklists that might be completed following a helping encounter), direct behavioral observations by self or others (such as time-sampling procedures), and direct physiological measures (e.g., heart rate) are missing from most intervention research—especially early intervention. Also missing are efforts to evaluate the acceptability and social desirability of interventions, as it is important to remember that evidence-based practices with a high dropout rate essentially are ineffective. Clearly, these will be difficult steps, especially in the context of a disaster or terrorist event; however, we need not wait for the "next big event" to develop and test early interventions. Small-scale disasters occur with great regularity, such as local flooding, forest fires, mudslides, industrial accidents (e.g., fires and chemical releases). These smaller events can be the proving grounds for early interventions and more sophisticated research designs.
4. Finally, as intervention packages are developed and empirically supported, it will be important to engage in dismantling research with the goal of determining which components of a package do or do not contribute to its effectiveness (keeping in mind that some components may have higher acceptability and

make the overall package more palatable, thus reducing drop-out rates). Related to this is the need to conduct a functional analysis to determine who is most likely to benefit from what intervention at what time. The overall goal is to avoid "throwing the kitchen sink" at everyone who presents for treatment, but rather to make intervention selection a needs-based process so as to make the most of resources that will be scarce in the immediate aftermath of disaster and terrorism.

Conclusions

There are several arguments for encouraging a greater degree of collaboration between cognitive-behavioral psychologists and members of the disaster mental health response community. First, similarities between models of cognitive-behavioral psychology and models of disaster mental health response suggest considerable compatibility between the two approaches. Second, effective cognitive-behavioral treatments for PTSD, depression, substance abuse, and other mental health problems have been developed. That many of these same problems can be caused or exacerbated by exposure to disaster or terrorist attack suggests that these treatment approaches may be useful in work with disaster/terrorism survivors. Third, the empirically-supported behavior change methods used in cognitive-behavioral treatments can be brought to bear on the specific challenges of disaster mental health response.

References

1. McNally R, Bryant RA, Ehlers A: Does early psychological intervention promote recovery form posttraumatic stress? *Psychological Science in the Public Interest* 2003;4:45–79.
2. National Institute of Mental Health: *Mental Health and Mass Violence: Evidenced-Based Early Psychological Intervention for Victims/Survivors of Mass Violence. A Workshop to Reach Consensus on Best Practices*. Washington, DC: US Government Printing Office, 2002.
3. Cao H, McFarlane AC, Klimidis S: Prevalence of psychiatric disorders following the 1998 Yun Nan (China) earthquake: The first 5-month period. *Soc Psychiatry Psychiatr Epidemiol* 2003;38:204-212.
4. Galea S, Ahern J, Resnick H, *et al*: Psychological sequelae of the September 11 terrorist attacks in New York City. *N Engl J Med* 2002;346:982–987.
5. Kuo C, Tang HS, Tsay CJ, *et al*: Prevalence of psychiatric disorders among bereaved survivors of a disastrous earthquake in Taiwan. *Psychiatr Serv* 2003;54:249–251.
6. Breslau N, Davus GC, Peterson EL, Schultz LR: Psychiatric sequelae of posttraumatic stress disorder in women. *Arch Gen Psychiatry* 1997;54:81–87.
7. Breslau N, Davis GC, Schultz LR: Posttraumatic stress disorder and the incidence of nicotine, alcohol, and other drug disorders in persons who have experienced trauma. *Arch Gen Psychiatry* 2003;60:289–294.
8. Walker EA, Keaton W, Russo J, *et al*: Health care costs associated with posttraumatic stress disorder symptoms in women. *Arch Gen Psychiatry* 2003;60:369–374.
9. National Child Traumatic Stress Network and National Center for PTSD: Psychological First Aid: Field Operations Guide. Available at http://www.ncptsd.va.gov/ncmain/ncdocs/manuals/nc_manual_psyfirstaid.html.
10. Young BH, Ford JD, Ruzek JI, *et al*: *Disaster Mental Health Services: A Guidebook for Clinicians and Administrators.* Palo Alto: Department of Veterans Affairs, National Center for PTSD, Education and Clinical Laboratory, VA Palo Alto Health Care System, 1998.
11. Barlow DH: Psychological treatments. *Am Psych* 2004;59:869–878.
12. O'Donohue W: Conditioning and Third-Generation Behavior Therapy. In: W O'Donohue (ed): *Learning and Behavior Therapy*. Boston: Allyn and Bacon, 1998, pp 1–14.
13. Hayes SC, Follette WC, Follette VF: Behavior Therapy: A Contextual Approach. In: AS Gurman, SB Messer, (eds): *Essential Psychotherapies: Theory and Practice*. New York: Guilford, 1995, pp 128–181.
14. Ruzek JI: Models of Early Intervention following Mass Violence and Other Trauma. In: EC Ritchie, PJ Watson, MJ Friedman, (eds): *Mental Health Intervention following Disasters and Mass Violence*. New York: Guilford, 2006, pp 16–34.
15. Harvey AG, Bryant RA: The relationship between acute stress disorder and posttraumatic stress disorder: A prospective evaluation of motor vehicle accident survivors. *J Consult Clin Psychol* 1998;66:507–512.
16. Litz BT, Williams L, Wang J, *et al*: A therapist-assisted internet self-help program for traumatic stress. *Prof Psychol Res Pr* 2004;35:628–634.
17. Bryant RA, Harvey AG, Dang ST, *et al*: Treatment of acute stress disorder: A comparision of cognitive-behavioral therapy and supportive counseling. *J Consult Clin Psychol* 1998;66:862–866.
18. Bryant RA, Sackville T, Dang ST, *et al*: Treating acute stress disorder: An evaluation of cognitive behavior therapy and supportive counseling techniques. *Am J Psychiatry* 1999;156:1780–1786.
19. Bryant RA, Moulds ML, Nixon RDV: Cognitive behaviour therapy of acute stress disorder: a four-year follow-up. *Behavior Research and Therapy* 2003; 41:489–494.
20. Kessler RC, Sonnega A, Bromet E, *et al*: Posttraumatic stress disorder in the national comorbidity survey. *Arch Gen Psychiatry* 1995;52:1048–1060.
21. Kilpatrick D, Saunders BE, Smith DW: Youth Victimization: Prevalence and Implications. National Institute of Justice: Research in Brief, 2003.
22. Resnick HS, Kilpatrick DG, Dansky BS, *et al*: Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *J Consult Clin Psychol* 1993;61:984–991.
23. Kilpatrick DG, Ruggiero KJ, Acienmo R, *et al*: Violence and Risk of PTSD, Major Depression, Substance Abuse/Dependence, and Comorbidity: Results From the National Survey of Adolescents. *J Consult Clin Psychol* 2003:71(4):692–700.
24. American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. Washington, DC: American Psychiatric Association 1994.
25. Follette VF, Ruzek JI: *Cognitive-Behavioral Therapies for Trauma*. 2nd ed. New York: Guilford, 2006.
26. Keane TM, Barlow DH: Posttraumatic Stress Disorder. In: DH Barlow (ed): *Anxiety and its Disorders: The Nature and Treatment of Anxiety and Panic*. New York: Guilford, 2002, pp 418–453.
27. Foa EB, Meadows EA: Psychosocial Treatments for Posttraumatic Stress Disorder. In: R Yehuda (ed): *Psychological Trauma*. Washington DC: American Psychiatric Press, 1998, pp 179–204.
28. Foa EB, Meadows EA: Psychosocial treatments for posttraumatic stress disorder: A critical review. *Annu Rev Psychol* 1997;48:449–480.
29. Keane TM: Psychological and Behavioral Treatments of Post-Traumatic Stress Disorder. In: PE Nathan, JM Gorman (eds): *A Guide to Treatments that Work*. New York: Oxford University Press, 1998, pp 398–407.
30. Ruggiero KJ, Morris TL, Scotti JR: Treatment for children with posttraumatic stress disorder: Current status and future directions. *Clinical Psychology: Science and Practice* 2001;8:210–227.
31. Cohen JA, Mannarino AP: A treatment outcome study for sexually abused preschool children: Initial findings. *J Am Acad Child Adolesc Psychiatry* 1996;35:42–50.
32. Cohen JA, Mannarino AP: Interventions for sexually abused children: Initial treatment outcome findings. *Child Maltreat* 1998;3:17–22.
33. Deblinger E, Lippman J, Steer R: Sexually abused children suffering posttraumatic stress symptoms: Initial treatment outcome findings. *Child Maltreat* 1996;1:310–321.
34. Deblinger E, Stauffer LB, Steer RA: Comparative efficacies of supportive and cognitive behavioral group therapies for young children who have been sexually abused and their nonoffending mothers. *Child Maltreat* 2001;6:332–343.
35. Goenjian AK, Karayan I, Pynoos RS, *et al*: Outcome of psychotherapy among early adolescents after trauma. *Am J Psychiatry* 1997;154:536–542.
36. Kolko, D: Individual cognitive behavioral treatment and family therapy for physically abused children and their offending parents: A comparison of clinical outcomes. *Child Maltreat* 1996;1:322–342.
37. Stein BD, Jaycox LH, Kataoka SH, *et al*: A mental health intervention for schoolchildren exposed to violence. *JAMA* 2003;290:603–611.
38. Urasano RJ, Bell C, Eth S, *et al*: Practice guidelines for the treatment of acute stress and posttraumatic stress disorder. *Am J Psychiatry* 2004;161(Suppl. 11):3–31.

39. Foa EB, Davidson JRT, Frances A, *et al*: Expert consensus treatment guidelines for posttraumatic stress disorder: A guide for patients and families. *J Clin Psychiatry* 1999;60(Suppl. 16):1–8.
40. Foa EB, Keane TM, Friedman MJ: *Effective Treatments for PTSD*. 2000, New York: Guilford.
41. National Collaborating Centre for Mental Health: *Post-Traumatic Stress Disorder: The Management of PTSD in Adults and Children in Primary and Secondary Care*. London: Gaskell and the British Psychological Society, 2005.
42. Saunders BE, Berliner L, Hanson RF, (eds): *Child Physical and Sexual Abuse: Guidelines for Treatment* (Final Report: January 15, 2003. Charleston: National Crime Victims Research and Treatment Center, 2003.
43. VA/DoD Clinical Guideline Working Group, VHA, Department of Veterans Affairs and Health Affairs, Department of Defense: M*anagement of Post-Traumatic Stress*. Washington, DC: Office of Quality and Performance, 2003. Publication 10Q-CPG/PTSD-04.
44. Somer E, Tamir E, Maguen S, Litz BT: Brief cognitive-behavioral phone-based intervention targeting anxiety about the threat of attack: A pilot study. *Behav Res Ther* 2005;43:669–679.
45. Walser RD, Hayes SC: The effects of acceptance and suppression on thought and emotions: Analysis of a talk-aloud procedure in Association for Advancement of Behavior Therapy (AABT), Washington, DC: 19–22, November 1998.
46. Brown PJ, Wolfe J: Substance abuse and post-traumatic stress disorder comorbidity. *Drug Alcohol Depend* 1994;35(1):51–59.
47. Najavits LM, Weiss RD, Shaw SR: The link between substance abuse and posttraumatic stress disorder in women. A research review. *Am J Addict* 1997;6(4):273–83.
48. Ouimette P, Brown PJ (eds): *Trauma and Substance abuse: Causes, Consequences, and Treatment of Comorbid Disorders*. Washington, DC: American Psychological Association, 2003.
49. Stewart: Alcohol abuse in individuals exposed to trauma: A critical review. *Psychol Bull* 1996;120(1):83–112.
50. Chilcoat HD, Breslau N: Investigations of causal pathways between PTSD and drug use disorders. *Addict Behav* 1998;23:827–824.
51. Kulka RA: *Trauma and the Vietnam War Generation: Report of Findings from the National Veterans Readjustment Study*. New York: Brunner/Mazel, 1990.
52. Carroll KM: Relapse Prevention as a Psychosocial Treatment: A Review of Controlled Clinical Trials. In: AG Marlatt, G.R. Vanden Bos (eds): *Addictive Behaviors: Readings on Etiology, Prevention, and Treatment*. Washington, DC: American Psychological Association, 1996, pp 697–717.
53. Najavits LM: *Seeking Safety: A Treatment Manual for PTSD and Substance Abuse*. New York: Press, 2002.
54. Triffleman E, Carroll K, Kellogg S: Substance dependence posttraumatic stress disorder therapy: An integrated cognitive-behavioral approach. *J Subst Abuse Treat* 1999;17:3–14.
55. Bien T, Miller WR, Tonigan JS: Brief interventions for alcohol problems: A review. *Addiction* 1993;88:315–335.
56. Gentilello LM, Rivara FP, Donovan DM, *et al*: Alcohol interventions in a trauma center as a means of reducing the risk of injury recurrence. *Ann Surg* 1999;230:473–483.
57. Brady KT, Killeen TK, Brewerton T, Lucerini S: Comorbidity of psychiatric disorders and posttraumatic stress disorder. *J Clin Psychiatry* 2000;61:22–32.
58. Blanchard EB, Buckley TC, Hickling EJ, Taylor AE: Posttraumatic stress disorder and comorbid major depression: Is the correlation an illusion. *J Anxiety Disord* 1998;12:21–37.
59. Dow B, Kline N: Antidepressant treatment of posttraumatic stress disorder and major depression in veterans. *Ann Clin Psychiatry* 1997;9:1–5.
60. Shalev AY, Sahar T, Freedman S, *et al*: A prospective study of heart rate response following trauma and the subsequent development of posttraumatic stress disorder. *Arch Gen Psychiatry* 1998;55:553–559.
61. Hollon SD, Shelton RC: Treatment guidelines for major depressive disorder. *Behav Ther* 2001;32:235–258.
62. Lewinsohn PM: A behavioral Approach to Depression, In: RM Friedman, MM Katz (eds): *The Psychology of Depression: Contemporary Theory and Research*. New York: Wiley, 1974.
63. Martell CR, Addis ME, Jacobson NS: *Depression in Context: Strategies for Guided Action*. New York: Norton, 2001.
64. Lejuez CW, Hopko DR, Hopko SD: A brief behavioral activation treatment for depression. *Cogn Behav Pract* 2001;8:164–175.
65. Beck AT, Rush AJ, Shaw BF, *et al*: *Cognitive Therapy of Depression*. New York: Guilford 1979.
66. Greenberger D, Padesky CA: *Mind over Mood: Change how You Feel by Changing the Way You Think*. New. New York: Guilford, 1995.
67. Litz BT, Gray MJ: Early Intervention for Trauma in Adults: A Framework for First Aid and Secondary Prevention. In: BT Litz (ed):*Early Intervention for Trauma and Traumatic Loss*. Guilford: New York, 2004, pp 87–111.
68. Andrews B, Brewin R, Rose S, Kirk M: Predicting PTSD symptoms in victims of violent crime: the role of shame, anger, and childhood abuse. *J Abnorm Psychol* 2000;109:69–73.
69. Chemtob CM, Hamada CM, Hamada RS, *et al*: Anger, impulsivity, and anger control in combat-related PTSD. *J Consult Clin Psychol* 1994;62:827–832.
70. Jenkins SR: Coping and social support among emergency dispatchers: Hurricane Andrew. *J Soc Behav Pers* 1997;12:201–216.
71. Riggs DS, Danvu CV, Gershuny BS, *et al*: Anger and posttraumatic stress disorder in female crime victims. *J Trauma Stress* 1992;5:613–625. ???
72. Saunders DG: Posttraumatic stress systoms profiles of battered women: A comparison of survivors in two settings. *Violence Vict* 1994;9:31–44.
73. Sutker PB, Corrigan SA, Sundgaard-Riise, *et al*: Exposure to war trauma war-related PTSD, and psychological impact of subsequent hurricane. *J Psychopathol Behav Assess* 2002;24:25–37.
74. Novaco RW: Anger as a Clinical and Social Problem. In: R Blanchard, C Blanchard (eds): *Advances in the Study of Aggression*. New York: Academic, 1986, pp 1–67.
75. Beckham JC, Moore SD, Reynolds V: Interpersonal hostility and violence in Vietnam veterans with chronic posttraumatic stress disorder. A review of theoretical models and empirical evidence. *Aggression Viol Beh* 2000;5:451–466.
76. Byrne CA, Riggs DS: The cycle of trauma: relationship in male veterns with symptoms of posttraumatic stress disorder. *Violence Vict* 1996;11:213–225.
77. Chemtob CM, Novaco RW, Hamada RS, Gross DM: Cognitive-behavioral treatment for severe anger in combat-related posttraumatic stress disorder. *J Consult Clin Psychol* 1997;65:184-189.
78. Cahill SP, Rauch SAM, Hembree EA, *et al*: Effectiveness of cognitive-behavioral treatments for PTSD on anger. *Cogn Behav Ther* 2003;17:113–131.
79. Novaco RW, Chemtob CM: Anger and Trauma: Conceptualization, Assessment, Therapies for Trauma. In: Follette VM, Ruzek JI, Abueg FR (eds): *Cognitive-Behavioral Therapies for Trauma*. New York: Guilford, 1998, pp 162–190.
80. Novaco, RW: Anger Control: *The Development and Evaluation of an Experimental Treatment*. Lexington: D.C. Health, 1975.
81. Novaco, RW: A stress inoculation approach to anger management in the training of law enforcement officers. *Am J Community Psychol* 1977;5:327–346.
82. Bernstein DA, Borkovec TD: *Progressive Relaxation Training: A Manual for the Helping Professions*. Champaign: Research Press, 1973.
83. Poppen R: *Behavioral Relaxation Training and Assessment*. New York: Pergamon, 1998.
84. Deffenbacher JL: Cognitive-Behavioral Approaches to Anger Reduction. In: KS Dobson, KD Craig (eds): *Advances in Cognitive-Behavioral Therapy*. Thousand Oaks: Sage, 1996.
85. Christensen A, Jacobson NS: *Reconcilable Differences*. New York: Guilford, 2000.
86. Duckworth MP: Assertiveness Skills and the Management of Related Factors. In: O'Donohue W, Fisher JE, Hayes SC (eds): *Cognitive-Behavior Therapy: Applying Empirically Supported Techniques in your Practice*. Hoboken: Wiley, 2003, pp 16–22.
87. D'Zurilla TJ, Nezu AM: *Problem-Solving Therapy: A Social Competence Approach to Clinical Intervention*. New York: Springer, 1999.
88. Lloyd A: Urge Surfing. In: O'Donohue W, Fisher JE, Hayes SC (eds): *Cognitive-Behavior Therapy: Applying Empirically Supported Techniques in your Practice.* Hoboken: Wiley, 2003 pp 415–455.
89. Ofman PS, Mastria MA: Mental health response to terrorism: The World Trade Center bombing. *J Mental Health Counseling* 1996;17:312.
90. Young BH, Ruzek JI, Ford JD: Cognitive-Behavioral Group Treatment for Disaster-Related PTSD. In: Young BH, Blake DD (eds): *Group Treatments for Post-Traumatic Stress Disorder*. Philadelphia: Brunner/Mazel, 1999, pp 149–200.
91. Stubenbort K, Donnelly GR, Cohen JA: Cognitive-behavioral group therapy for bereaved adults and children following an air disaster. *Group Dyn* 2001;5:261–276.
92. Brown EJ, Pearlman MY, Goodman RF: Facing fears and sadness: Cognitive-behavioral therapy for childhood traumatic grief. *Harv Rev Psychiatry* 2004;12:187–198.
93. Cohen JA, Deblinger E, Mannarino AP, Steer RA: A multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *J Am Acad Child Adolesc Psychiatry* 2004;43:393–402.
94. Kaplan SJ, Pelcovitz D, Fornari V: The treatment of children impacted by the World Trade Center attack. *Journal of Aggression, Maltreatment, and Trauma* 2005;10:455–466.

95. Basoglu M, Livanou M, Salcioglu E, Kalender D: A brief behavioral treatment of chronic post-traumatic stress disorder in earthquake survivors: Results from an open trial. *Psychol Med* 2003;33:647–654.
96. Basoglu M, Salcioglu E, Livanou M, *et al*: Single-session behavioral treatment of earthquake-related posttraumatic stress disorder: a randomized waiting list controlled trial. *J Traumatic Stress* 2005;18:1–11.
97. Gillespie K, Duffy M, Hackmann A, Clark DM: Community based cognitive therapy in the treatment of post-traumatic stress disorder following the Omagh bomb. *Behav Res Ther* 2002;40:345–357.
98. Levitt JT, Davis L, Miranda R, *et al*: Bringing a manualized treatment for PTSD to the community in the aftermath of 9/11. Presented at Association for Advancement of Behavior Therapy, 2003. Boston, Massachusetts.
99. Neria Y, Suh EJ, Marshall RD: The Professional Response to the Aftermath of September 11, 2001 in New York City: Lessons Learned from Treating Victims of the World Trade Center Attacks. In: Litz B (ed): *Early Interventions for Trauma and Traumatic Loss*. New York: Guilford Press, 2003.
100. Hamblen J, Gibson LE, Mueser K, *et al*: *The National Center for PTSD's Brief Intervention for Continuing Postdisaster Distress*. White River Junction, Vermont: National Center for PTSD, 2003.
101. Hamblen JL, Gibson LE, Mueser KT, Norris FH: Cognitive behavioral therapy for prolonged post disaster distress. *J Clin Psycho* 2006;62:1043–1052.
102. Norris FH, Hamblem JL, Watson PJ, *et al*: Toward Understanding and Creating Systems of Postdisaster Care: Findings and Recommendations from a Case Study of New York;s Response to the World Trade Center Disaster. In: Ritchie CE, Watson PJ, Friedman MJ (eds): *Mental Health Intervention following Disasters and Mass Violence*. New York: Guilford, 2006.
103. Difede J, *et al*: Evaluation and treatment of firefighters and utility workers following the World Trade Center Attack. 2002.
104. Silva RR, Cloitre M, Davis L, *et al*: Early intervention with traumatized children. *Psychiatr Quarterly* 2003;74:333–347.
105. Foa EB, Bo R: *Treating the Trauma of Rape: Cognitive-Behavioral Therapy for PTSD*. New York: Guilford, 1998.
106. Leonard LM, Follette VF, Compton JS: A Principle-Based Intervention for Couples Affected by Trauma. In: Follette VW, Ruzek JI (eds): *Cognitive-Behavioral Therapies for Trauma*. New York: Guilford, 2006, pp 362–387.
107. Monson CM, Schnurr PP, Stevens SP, Guthrie KA: Cognitive-behavioral couple's treatment for posttraumatic stress disorder: Initial findings. *J Trauma Stress* 2004;17:341–344.
108. Deblinger E, Thakkar-Kolar R, Ryan E: Trauma in Childhood. In: Follette VF, Ruzek JI (eds): *Cognitive-Behavioral Therapies for Trauma*. New York: Guilford, 2006.
109. Brewin CR, Rose S, Andrews B, *et al*: Brief screening instrument for posttraumatic stress disorder. *Br J Psychiatry* 2002;181:158–162.
110. Smith DW, Kilpatrick DG, Falsetti SA, *et al*: Postterrorism services for victims and surviving family members: Lessons from Pan Am 103. *Cogn Behav Pract* 2002;9: 280–286.
111. Miller WR, Rollnick S: *Motivational Interviewing: Preparing People for Change*. 2nd ed. New York: Guilford, 2001.
112. Mitchell JT: When disaster strikes: The critical incident stress debriefing process. *JEMS* 198318:36–49.
113. Raphael B, Wilson JP: *Psychological Debriefing: Theory, Practice and Evidence*. Cambridge: Cambridge University, 2000.
114. Katon W, Von Korff M, Lin E: Collaborative management to achieve depression treatment guidelines. *J Clin Psychiatry* 1997;58(Suppl. 1):20–23.
115. Craske MG, Golinelli D, Stein MB: Does the addition of cognitive behavioral therapy improve panic disorder treatment outcome relative to medication alone in the primary-care setting? *Psychol Med* 2005;35:1645–1654.
116. Fleming MF: Screening and brief intervention in primary care settings. *Alcohol Res Health* 2004;28:57–62.
117. Resick HS, Acierno R, Holmes M, *et al*: Prevention of post-rape psychopathology: Preliminary findings of a controlled acute rape treatment study. *J Anxiety Disord* 1999;13:359–370.
118. Prins A, Ouimetter P, Kimerling R, *et al*: The primary care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry* 2003;9(1):9–4.
119. Lange A, van de Ven JP, Schrieken B, Emmelkamp PM: Interapy: treatment of posttraumatic stress through the Internet: A controlled trial. *J Behav Ther Exp Psychiatry* 2001;32:73–90.
120. Lange A, Riedijk D, Hudcovicova M, *et al*: Interapy: a controlled randomized trial of the standardized treatment of posttraumatic stress through the Internet. *J Consult Clin Psychol* 2003;71:901–909.
121. Ruggiero KJ, Resnick HS, Acierno R, *et al*: Internet-based intervention for mental health and substance use problems in disaster-affected populations: A pilot feasibility study. *Behav Ther* 2006;37:190–205.
122. Rosen CS, Young HE, Norris FH: On a Road paved with Good Intentions, You still Need a Compass: Monitoring and Evaluating Disaster Mental Health Services. In: Ritchie EC, Watson PJ, Friedman MJ (eds): *Mental Health Intervention following Disasters and Mass Violence*. New York: Guilford, 2006, pp 206–223.
123. Becker CB, Zayfert C, Anderson E: A survey of psychologists' attitudes toward and utilization of exposure therapy for PTSD. *Behav Res Ther* 2004;42:277–292.
124. Litz BT, Gibson LE: Conducting Research on Mental Health Interventions. In: Ritchie EC, Watson PJ, Friedman MJ (eds): *Mental Health Intervention following Disasters and Mass Violence*. New York: Guilford, 2006, pp 206–223.
125. Ruzek JI, *et al*: Psychological first aid. *J Mental Health Counseling*, In press.